

S1pr3 Cas9-KO Strategy

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Project Overview

Project Name

S1pr3

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slpr3* gene. The schematic diagram is as follows:



- The *Slpr3* gene has 1 transcript. According to the structure of *Slpr3* gene, exon2 of *Slpr3-201* (ENSMUST00000064166.4) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slpr3* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for disruptions in this gene display an essentially normal phenotype although litter sizes are reduced. Susceptibility to pulmonary edema is also reduced.
- The partial sequence of intron of *Gm32834* gene will be deleted together in this strategy.
- The *Slpr3* gene is located on the Chr13. If the knockout mice are crossed with other mice strains to obtain double gene positive homozygous mouse offspring, please avoid the two genes on the same chromosome.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

S1pr3 sphingosine-1-phosphate receptor 3 [*Mus musculus* (house mouse)]

Gene ID: 13610, updated on 12-Mar-2019

Summary

- Official Symbol** S1pr3 provided by [MGI](#)
- Official Full Name** sphingosine-1-phosphate receptor 3 provided by [MGI](#)
- Primary source** [MGI:MGI:1339365](#)
- See related** [Ensembl:ENSMUSG00000067586](#)
- Gene type** protein coding
- RefSeq status** REVIEWED
- Organism** [Mus musculus](#)
- Lineage** Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
- Also known as** Edg3; Lpb3; S1p3; A1132464
- Summary** This gene encodes a member of the G-protein coupled receptor 1 family. The encoded protein is a receptor for the lysophospholipid sphingosine 1-phosphate. The gene product functions in endothelial cells and is involved in vascular and heart development. The gene product mediates HDL and HDL-associated lysophospholipid-induced vasorelaxation, and it coordinates with other lysophospholipid receptors in the process of angiogenesis. [provided by RefSeq, Jan 2010]
- Expression** Broad expression in limb E14.5 (RPKM 30.0), lung adult (RPKM 20.8) and 19 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: 13; 13 A5 See S1pr3 in [Genome Data Viewer](#)

Exon count: 2

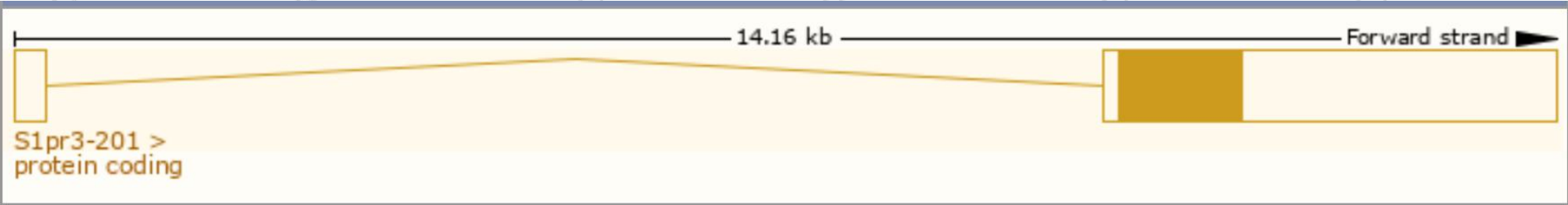
Annotation release	Status	Assembly	Chr	Location
106	current	GRCm38.p4 (GCF_000001635.24)	13	NC_000079.6 (51408618..51422797)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	13	NC_000079.5 (51503987..51518166)

Transcript information (Ensembl)

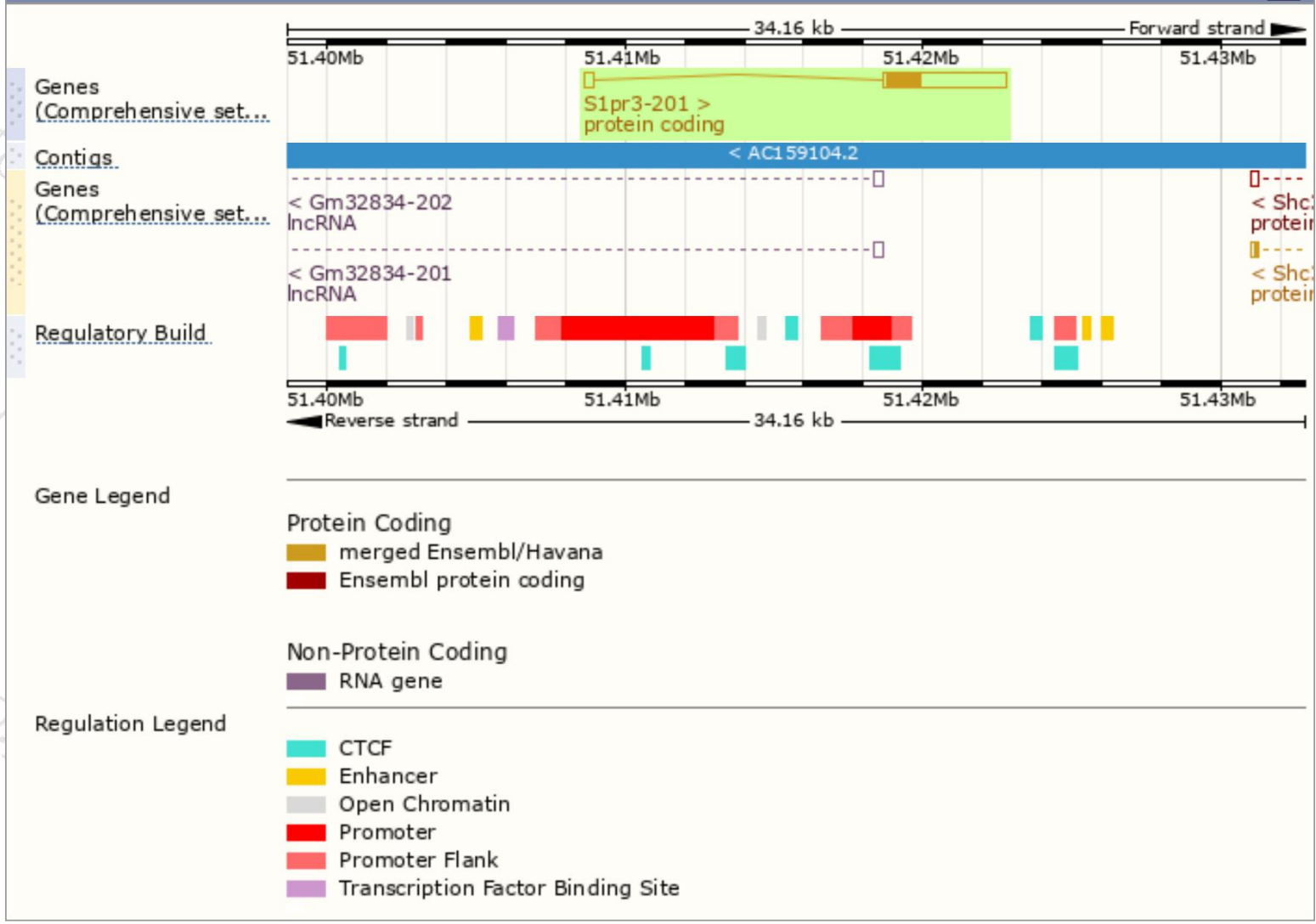
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
S1pr3-201	ENSMUST00000087978.4	4463	378aa	Protein coding	CCDS26512	Q9Z0U9	TSL:1 GENCODE basic APPRIS P1

The strategy is based on the design of *S1pr3-201* transcript, The transcription is shown below



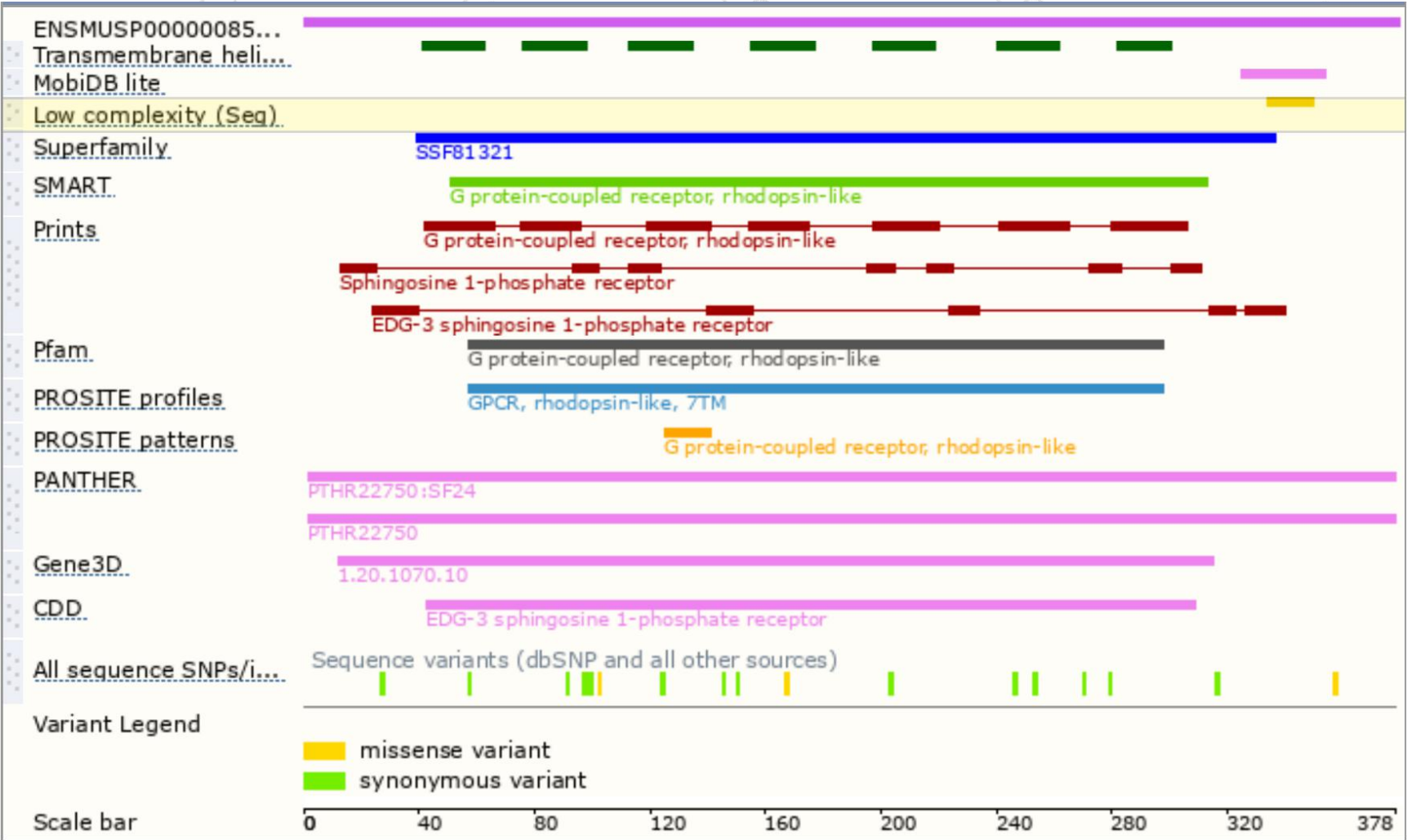
Genomic location distribution



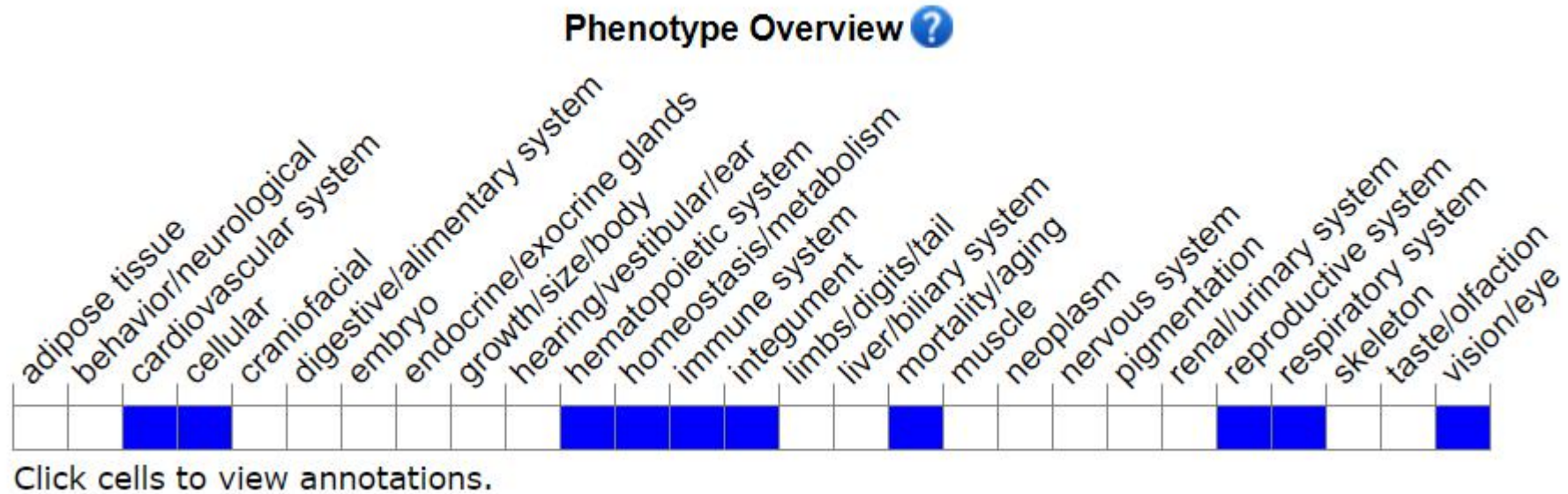
Protein domain



集萃药康
GemPharmatech



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

Mice homozygous for disruptions in this gene display an essentially normal phenotype although litter sizes are reduced. Susceptibility to pulmonary edema is also reduced.

If you have any questions, you are welcome to inquire.

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